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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,298	04/02/2001	Jeffrey Douglas Haggar	RSW920010036US1	9384

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EXAMINER	
MATTIS, JASON E	
ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/824,298	HAGGAR ET AL.	
	Examiner	Art Unit	
	Jason E. Mattis	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment After-Final filed 5/16/07. Claims 1-10 and 12-47 are currently pending in the application.

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 5-8, 12, 23, 24, 27-30, 33-36, 39-42, 45, and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Chapman et al. (U.S. Pat. 6643292 B2).

With respect to claims 1, 23, and 35, Chapman et al. discloses a method, data processing system, and computer program product with computer code for managing traffic in a network data processing system **(See column 7 lines 39-58 and Figure 8 of Chapman et al. for reference to processor, which is a data processing system,**

running a TCP protocol to implement a method for managing traffic). Chapman et al. also discloses monitoring traffic for a plurality of TCP connection through a given network path **(See column 7 line 59 to column 8 line 12 of Chapman et al. for reference to monitoring bandwidth usage of multiple TCP connections of a TCP trunk, which is a network path)**. Chapman et al. further discloses prior to sending a packet on a particular TCP connection determining if the packet will cause traffic for the network path to exceed the level of traffic allowed, and if so, reducing the traffic for the particular TCP connection using an action based on a TCP transmission protocol **(See column 8 lines 21-54 of Chapman et al. for reference determining that a particular packet will cause a TCP trunk to exceed its guaranteed minimum bandwidth before it is sent and for reference to, if the packet will cause the TCP trunk to exceed its guaranteed minimum bandwidth, marking the packet with a lower priority indicating it is discardable to reduce the traffic for the TCP connection)**.

With respect to claims 7, 29, and 41, Chapman et al. discloses a method, data processing system, and computer program product with computer code for managing traffic in a network data processing system **(See column 7 lines 39-58 and Figure 8 of Chapman et al. for reference to processor, which is a data processing system, running a TCP protocol to implement a method for managing traffic)**. Chapman et al. also discloses monitoring traffic for each of a plurality TCP connections through a given network path **(See column 7 line 59 to column 8 line 12 of Chapman et al. for reference to monitoring bandwidth usage of multiple TCP connections of a TCP trunk, which is a network path)**. Chapman et al. further discloses prior to sending a

packet on a selected TCP connection determining if the packet will cause traffic for the network path to exceed a threshold and its fair share for the selected TCP connection, and if so, reducing the traffic for the selected TCP connection using an action based on a TCP transmission protocol **(See column 8 lines 21-54 of Chapman et al. for reference determining that a particular packet will cause a TCP connection or a TCP trunk to exceed its guaranteed minimum bandwidth before it is sent and for reference to, if the packet will cause the TCP connection or TCP trunk to exceed its guaranteed minimum bandwidth, marking the packet with a lower priority indicating it is discardable to reduce the traffic for the TCP connection)**.

With respect to claims 2, 8, 24, 30, 36, and 42, Chapman et al. discloses that the traffic is monitored using at least one of data transfer rate, peak data transfer rate, burst size, and maximum packet size **(See column 7 lines 59-67 and column 8 lines 35-45 of Chapman et al. for reference to monitoring average bandwidth, which is the same as data transfer rate)**.

With respect to claims 5, 27, 33, 39, and 45, Chapman et al. discloses setting and changing a quality of service for packets **(See column 8 lines 35-45 of Chapman et al. for reference to setting and changing a packet priority, which is a quality of service level for the packets)**.

With respect to claims 6, 28, and 40, Chapman et al. discloses dropping the packet **(See column 8 lines 35-54 of Chapman et al. for reference to marking packets as discardable meaning they are dropped)**.

With respect to claims 12 and 34, Chapman et al. discloses that the threshold takes into account a fair share of bandwidth available for the plurality of TCP connections **(See column 7 lines 59-67 of Chapman et al. for reference to using a fair share minimum bandwidth for each TCP connection of the TCP trunk)**.

With respect to claim 46, Chapman et al. discloses that if it is determined that a packet will cause the traffic for the network path to exceed the level of traffic allowed for the network path, further determined that the packet will cause the traffic for a selected TCP connection to exceed its fair share amount of the network path, the traffic for the selected TCP connection or UDP association of the network path is reduced **(See column 8 lines 21-54 of Chapman et al. for reference determining that a particular packet will cause a TCP connection and a TCP trunk to exceed its guaranteed minimum bandwidth before it is sent and for reference to, if the packet will cause the TCP connection and TCP trunk to exceed its guaranteed minimum bandwidth, marking the packet with a lower priority indicating it is discardable to reduce the traffic for the TCP connection)**.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3, 4, 9, 25, 26, 31, 37, 38, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman et al. in view of Jain et al. (U.S. Pat. 5491801) and in further view of Qaddoura (U.S. Pat. 6646987).

With respect to claims 3, 9, 25, 31, 37, and 43, Chapman et al. does not disclose reducing a congestion window size by multiplying an amount of bandwidth available by a dynamic variable to reduce the bandwidth available based on a fair share for the TCP connection

With respect to claims 4, 26, and 38, Chapman et al. does not disclose reducing the congestion window using an equation CW = max(MinW, min(CW*F,MaxW)).

With respect to claims 3, 4, 9, 25, 26, 31, 37, 38, and 43, Jain et al., in the field of communications discloses reducing a congestion window by multiplying the amount of bandwidth available by a variable based on a fair share for a particular network path **(See column 11 line 8-39 and column 11 line 63 to column 12 line 4 of Jain et al. for reference to reducing a window size by multiplying by a variable)**. Jain et al.

also discloses reducing the congestion window using an equation CW = max(MinW, min(CW*F,MaxW)). Jain et al. discloses that a window size is reduced by a fraction of 0.875 times the current window size according to rules limiting a window size to a maximum and a minimum window size, which performs the same function as the claimed equation **(See column 11 lines 8-62 of Jain et al. for reference to the rules for reducing the window size)**. Reducing a congestion window by multiplying the amount of bandwidth available by a variable based on a fair share for a particular network path has the advantage of allowing each TCP connection to have its bandwidth allocation directly by changing its window size.

It would have been obvious for one of ordinary skill in the art at the time of the invention, to combine reducing a congestion window by multiplying the amount of bandwidth available by a variable based on a fair share for a particular network path, as suggested by Jain et al., with the system and method of Chapman et al., with the motivation being to allow each TCP connection to have its bandwidth allocation directly by changing its window size.

With respect to claims 3, 4, 9, 25, 26, 31, 37, 38, and 43, Although Jain et al. does disclose using a fraction, c, chosen as appropriate **(See column 11 line 63 to column 12 line 4)**, the combination of Chapman et al. and Jain et al. does not specifically disclose that the fraction is a dynamic variable.

With respect to claims 3, 4, 9, 25, 26, 31, 37, 38, and 43, Qaddoura, in the field of communications, discloses adjusting a congestion window size using a dynamic variable **(See column 6 lines 42-52 of Qaddoura for reference to automatically**

adjusting a congestion window size to be a variable of a maximum congestion window size). Using a dynamic variable to adjust a congestion window size has the advantage of providing greater control over the amount of congestion window size reduction.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Qaddoura, to combine using a dynamic variable to adjust a congestion window size, as suggested by Qaddoura, with the system and method of Chapman et al. and Jain et al., with the motivation being to provide greater control over the amount of congestion window size reduction.

7. Claims 10, 32, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman et al. in view of Blasbalg (U.S. Pat. 4771391).

With respect to claims 10, 32, and 44, the Chapman et al. does not disclose reducing a sending size for data packets.

With respect to claims 10, 32, and 44, Blasbalg, in the field of communications, discloses reducing the sending size of data packets when congestion is detected **(See column 12 line 53 to column 13 line 9 of Blasbalg for reference to reducing the packet size of packets on a congested path)**. Reducing the sending size of packets has the advantage of providing a way of reducing congestion on a path while still allowing some traffic to pass on the path.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Blasbalg, to combine reducing the sending

size of packets, as suggested by Blasbalg, with the congestion control system and method of Chapman et al., with the motivation being to provide a way of reducing congestion on a path while still allowing some traffic to pass on the path.

8. Claims 13-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Packer et al. (U.S. Pat. 6205120) in view of Chapman et al.

With respect to claims 13 and 18, Packer et al. discloses a data processing system **(See column 4 lines 29-44 and Figure 1A of Packer et al. for reference to a client-server computer system, which is a data processing system)**. Packer et al. also discloses a bus system **(See column 4 lines 45-59 and Figure 1A of Packer et al. for reference to bus subsystem 32)**. Packer et al. further discloses a communications unit connected to the bus **(See column 4 lines 45-59 and Figure 1A of Packer et al. for reference to a network interface 40, which is a communications unit, connected to bus subsystem 32)**. Packer et al. also discloses a memory connected to the bus system **(See column 4 lines 45-59 and Figure 1A of Packer et al. for reference to storage subsystem 35 connected to bus subsystem 32)**. Packer et al. further discloses a processor unit connected to the bus system **(See column 4 lines 45-59 and Figure 1A of Packer et al. for reference to processor 30 connected to bus subsystem 32)**. Although the system or Packer et al. discloses implementing congestion control, Packer et al. does not specifically disclose monitoring traffic for a plurality of network paths and reducing an amount of bandwidth available to a particular network path using an action based on a protocol used by the

particular network path in response to a packet for a particular network path causing traffic to exceed a level of traffic allowed, wherein the action varies for different transmission protocols.

With respect to claims 13 and 18, Chapman et al., in the field of communications discloses monitoring traffic for each of a plurality TCP connections through a given network path **(See column 7 line 59 to column 8 line 12 of Chapman et al. for reference to monitoring bandwidth usage of multiple TCP connections of a TCP trunk, which is a network path)**. Chapman et al. also discloses prior to sending a packet on a selected TCP connection determining if the packet will cause traffic for the network path to exceed a threshold and its fair share for the selected TCP connection, and if so, reducing the traffic for the selected TCP connection using an action based on a TCP transmission protocol **(See column 8 lines 21-54 of Chapman et al. for reference determining that a particular packet will cause a TCP connection or a TCP trunk to exceed its guaranteed minimum bandwidth before it is sent and for reference to, if the packet will cause the TCP connection or TCP trunk to exceed its guaranteed minimum bandwidth, marking the packet with a lower priority indicating it is discardable to reduce the traffic for the TCP connection)**. Monitoring traffic for a plurality of network paths and reducing an amount of bandwidth available based on a fair share for the particular network path in response to a packet for a particular network path causing traffic to exceed a level of traffic allowed has the advantage of providing a congestion control method to stop overused data paths from flooding network resources.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Chapman et al., to combine monitoring traffic for a plurality of network paths and reducing an amount of bandwidth available based on a fair share for the particular network path in response to a packet for a particular network path causing traffic to exceed a level of traffic allowed, as suggested by Chapman et al., with the data processing system of Packer et al., with the motivation being to provide a congestion control method to stop overused data paths from flooding network resources.

With respect to claims 14 and 19, Packer et al. discloses a primary bus and a secondary bus **(See column 5 lines 1-8 of Packer et al. for reference to using multiple busses, which would include a primary bus and secondary busses)**.

With respect to claims 15 and 20, Packer et al. discloses using a single processor **(See column 4 lines 45-59 and Figure 1A of Packer et al. for reference to using one or more processors 30)**.

With respect to claims 16 and 21, Packer et al. discloses that the processor unit includes a plurality of processors **(See column 4 lines 45-59 and Figure 1A of Packer et al. for reference to using one or more processors 30)**.

With respect to claims 17 and 22, Packer et al. discloses that the communications unit is an Ethernet adapter **(See column 4 lines 45-59 and Figure 1A of Packer et al. for reference to the network interface block 40 employing Ethernet)**.

9. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chapman et al. in view of Firoiu et al. (U.S. pat. 6820128 B1).

With respect to claim 47, Chapman et al. does not disclose that the monitoring comprises monitoring at a server the traffic for the plurality of TCP connections or UDP associations.

With respect to claim 47, Firoiu et al., in the field of communications, discloses that TCP connection traffic is monitored at a server **(See column 4 lines 29-41 and Figure 1 of Firoiu et al. for reference to traffic being monitored at network devices 12 that may be servers)**. Monitoring traffic at a server has the advantage of allowing the server to directly control its traffic level to reduce server congestion.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Firoiu et al., to combine monitoring traffic at a server, as suggested by Firoiu et al., with the system and method of Chapman et al., with the motivation being to allow the server to directly control its traffic level to reduce server congestion.

Response to Arguments

10. Applicant's arguments with respect to the rejections under Jain et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chapman et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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